ABSTRACTS OF CARDIOLOGY

Thiouracil Compounds in the Prevention of Paroxysmal Cardiac Arrhythmia. H. D. RUSKIN. *Lancet*, **1**, 134–137, Jan. 20, 1951.

Methyl and/or propylthiouracil in a daily dosage of 0·6 g. in three divided doses was given to 7 patients suffering from paroxysmal cardiac arrhythmia. None showed evidence of thyrotoxicosis. Electrocardiographic proof of the arrhythmia was obtained in 6 cases; 3 patients had supraventricular tachycardia, 2 auricular flutter with auriculo-ventricular block, and 2 auricular fibrillation. In 4 the paroxysms were completely prevented, in 2 they became less frequent, and in 1 who was also suffering from valvular heart disease of rheumatic origin with gross cardiac enlargement there was no response.

Of the 7 patients, 6 had failed to respond to quinidine. The rapidity of the response of some patients suffering from angina pectoris and paroxysmal arrhythmia to treatment with thiouracil compounds, and their relapse when the drug was discontinued, suggested a similar mode of action in both conditions. Possibly the myocardium was the site of the action. In the patients responding to treatment the drug was effective within a week. In 2 patients the combination of quinidine with a thiouracil compound was more effective than either drug alone.

R. Hodgkinson

Prognosis in Bundle Branch Block. I. Factors Influencing the Survival Period in Right Bundle Branch Block —, SHREENIVAS, A. L. MESSER, R. P. JOHNSON, and P. D. WHITE. *Amer. Heart J.*, **40**, 891–902, Dec., 1950. 35 refs.

This report is based upon an analysis of 281 cases of proven right bundle branch block. Males predominated over females by about 3 to 1 and the majority of cases occurred in the 50 to 79 age-groups. Death within one year had occurred in the case of 45 patients (24% of those traced). The average survival time (in years) of those surviving one year was 6·8 in the 40 to 49 age-group, 6·3 in the 50 to 59 age-group, and 5·1 in the 60 to 69 age-group. The degree of cardiac enlargement exerted an influence on the prognosis: the average survival period of those with no enlargement was 4·2 years, compared with 2·4 years for those with marked cardiac enlargement. The electrocardiogram was of little prognostic value, except that patients with a QRS complex of 0·12 second had a slightly less favourable prognosis than those with QRS complexes of 0·13 and 0·14 second. This curious discrepancy may be explained by the fact that a higher percentage of those with QRS complexes of 0·12 second had marked cardiac enlargement. No evidence was obtained that any prognostic significance could be attached to the direction of T_1 or the classification of the conduction disturbance as typical or atypical, concordant or discordant. It is concluded that "though *per se* an indication of some degree of heart disease, right bundle branch block is not infrequently found in persons surviving more than 5 years after its discovery." *William A. R. Thomson*

Treatment of Chronic Congestive Cardiac Failure with Ion Exchange Resins. E. E. KLEIBER and G. PICKAR. *Ann. intern. Med.*, **34**, 407–414, Feb., 1951.

It is now well established that sodium retention is an important feature of congestive cardiac failure with œdema. Elimination of salt from the body by mercurial diuretics and by low-salt diet has taken an important therapeutic place. Carboxylic resins are available which will hold sodium in the intestine. This enables the patient to take a more or less normal diet, the sodium content of which will not be fully absorbed. In 3 patients the results of giving such resins was striking, but in 4 others the drug caused severe gastro-intestinal discomfort and was refused. The resin used was somewhat bulky and of a sandy consistency. About half an ounce (15 g.) had to be taken three times a day.

The authors give the following warnings: (1) Decreased absorption of base may lead to an acidosis; this is a special danger if the kidneys are damaged and are unable to form ammonia. (2) Some resins may deplete the body of other mineral substances, such as potassium and calcium; this may be averted by the administration of additional calcium or potassium salts. (3) Only about half the patients will consent to take these resins. *J. McMichael*

Comparison of Clinical and Pathologic Aspects of Coronary Artery Disease in Men of Various Age Groups: a Study of 950 Autopsied Cases from the Armed Forces Institute of Pathology. W. M. YATES, P. P. WELSH, J. F. STAPLETON, and M. L. CLARK. *Ann. intern. Med.*, **34**, 352–392, Feb., 1951.

The clinical and necropsy findings in 950 cases of coronary artery disease are analysed with special reference to age grouping: 47% of the cases occurred under the age of 40 and 12% under the age of 30 years. Owing to the mode of selection of the data this is not to be taken as an over-all incidence in the population. White were more liable to coronary thrombosis than negro soldiers. Hypertension did not appear to be an important factor in the under-40 group. The coronary attack came on more frequently during strenuous activity in the young group, while over the age of 40 there was a higher incidence of premonitory symptoms

or previous manifestations of coronary artery disease. The first attack was more frequently fatal in men under 40. Myocardial scarring increased with age, and congestive failure from ischaemic heart disease was commoner in the older group. Rhythm and conduction disturbances in the electrocardiogram increased with age. Thrombotic occlusion of the coronary vessels was the rule in the under-40 group, while over this age arteriosclerotic narrowing complicated the picture. Mural thrombi, myocardial fibrosis, ventricular aneurysm, and pericarditis in association with recent infarction were all found with greater frequency with advancing age. Non-cardiac infarcts also increased with advancing years. The majority of subjects with pulmonary infarcts did not have mural thrombi on the right side of the heart. In general, the prognosis of coronary artery disease under the age of 40 would appear to be worse than in men aged 40 and over. *J. McMichael*

Spontaneous Rupture of Papillary Muscle of the Left Ventricle. A Clinical Syndrome. H. SCHWARTZ and F. R. CANELLI. *Amer. Heart J.*, **40**, 354–362, Sept., 1950.

The authors describe a case of cardiac infarction proved at necropsy to be complicated by rupture of a papillary muscle. Such infarction was the cause of rupture in most of the 32 recorded cases of the latter. The diagnosis is suggested by the appearance of a loud systolic murmur and marked, intractable pulmonary œdema in a patient with myocardial infarction. *D. Verel*

Arrhythmia in Myocardial Infarction. L. TATIBOUET and A. MATHIVAT. *Arch. Mal. Cœur.*, **43**, 891–995, Nov., 1950.

Out of 420 cases of coronary thrombosis disturbances of rhythm were observed in 37 cases. Auricular fibrillation was commonest (14 cases); ectopic beats occurred, rather surprisingly, in 10 cases only; auricular flutter twice; ventricular tachycardia 6 times (fatal in 4 cases); in 5 cases complete A-V block developed. No correlation between the location of the infarct and the disturbance of rhythm was apparent. *G. Schoenewald*

Cardiac Aneurysm: Clinical and Electrocardiographic Analysis. J. B. MOYER and G. I. HILLER. *Amer. Heart J.*, **41**, 340–358, March, 1951.

This concise review of the literature of cardiac aneurysm and account of 20 cases (12 with necropsy control) is chiefly concerned with the electrocardiographic findings. The authors suggest that there is no pattern characteristic of ventricular aneurysm. Changes, when present, are those of antecedent extensive myocardial infarction. Persistent RS–T elevation is present in many cases, but the authors agree with others that this may be found with large infarcts in the absence of aneurysm formation. It is probably due to hypertrophy of the opposite heart wall, the cardiographic changes resulting from this being transmitted through the destroyed myocardium. An upright R wave in lead aVR is not an invariable finding. *A. Venner*

Intracavitary Electrocardiographic Study of the Wolff–Parkinson–White Syndrome and its Induction by Excitation of the Interventricular Septum. E. COELHO, J. M. FONSECA, A. S. BORGES, A. NUNES, and E. PAIVA. *Sem. Hôp. Paris*, **27**, 8–16, Jan. 2, 1951.

The Wolff–Parkinson–White syndrome was studied with intracavitary electrocardiography as described by Coelho. Detailed tracings are given of 4 cases in which the syndrome occurred spontaneously. The condition was investigated experimentally both in man and in the dog. Tracings were obtained from 4 patients in whom the walls of the atria and ventricles were stimulated by means of a catheter. In dogs, ectopic foci of excitation were produced by injection of alcohol and silver nitrate into the heart muscle.

It is concluded that in many cases the Wolff–Parkinson–White syndrome is a result of an ectopic focus of excitation in the interventricular septum. *F. A. Langley*

Electrocardiographic Changes associated with Allergic Reactions to Penicillin. M. J. BINDER, H. J. GUNDERSON, J. CANNON, and L. ROSOVE. *Amer. Heart J.*, **40**, 940–944, Dec., 1950.

Details are given of 3 patients with severe allergic reactions to penicillin, in whom electrocardiographic changes were noted. These consisted of: Case 1, inversion of T in all limb leads and in V_5. Case 2, inversion of T in leads II, III, V_4, V_5, and V_6; T_1 isoelectric. Case 3, T low upright in leads I and V_5, isoelectric in II, diphasic in V_3 and V_4, inverted in V_2. In all 3 cases the electrocardiograms were normal within 1 to 3 weeks. A series of 25 additional patients with mild allergic reactions during penicillin therapy were studied, and in none of them was there any electrocardiographic abnormality, suggesting that electrocardiographic changes occur only in severe penicillin reactions. *William A. R. Thomson*

Cavity Potentials of the Human Ventricles. H. A. ZIMMERMAN and H. K. HELLERSTEIN. *Circulation*, **3**, 95–104, Jan., 1951.

The potential changes in the left ventricular cavity in man were recorded by the method of retrograde ulnar arterial catheterization. Negative potentials were recorded during depolarization, as was expected from the work of Wilson and others. *Albert Venner*

The Creation of a Femoral Arterio-venous Anastomosis in the Treatment of Severe Arterial Hypertension. C. LIAN and H. WELTI. *Mém. Acad. Chir.*, Paris, **76**, 930–935, Dec. 6, 1950.

After experiments on dogs the authors tried the effect of establishing a fistula between the superficial femoral artery and vein in 9 cases of hypertension with severe symptoms. The first 2 cases upon which they operated were cases of hypertensive heart failure, and the results were disappointing. However, in 6 cases of less severity, 3 of which have been followed up for several months, the results appear to have been well worth while. The diastolic pressure has been reduced by 30 to 40 mm.

Hg and the systolic pressure to a similar extent, the headache has disappeared, and two patients have returned to heavy labouring work. In view of the cardiac enlargement that may follow formation of an arteriovenous fistula, it is suggested that it might be well to ligate the femoral vein above the fistula in order to diminish the pressure in the femoral, iliac, and inferior caval veins. The technique of the operation is described, a fistula 6 mm. long being established under local analgesia; no shock or complication has resulted from the procedure. *Peter Martin*

Therapy of Hypertension. The Use of Veratrum Viride Alone and Combined with Certain Dihydrogenated Alkaloids of Ergot. I. L. JOSEPHS. *Ann. west. Med. Surg.*, 4, 789–794, Dec., 1950.

Veratrum viride contains several alkaloids and acts as a vagotonic. Injection into animals causes a slowing of respiration and of the pulse, and a fall in blood pressure. In man the drug is given by mouth. On account of reactions only 4 of 25 patients were able to tolerate a large enough dose to cause a fall in the diastolic pressure of more than 10 mm. Hg. Of the remaining patients, 10 were then given, in addition, 2 to 5 mg. of "CCK 179" (a mixture of the three sympathicolytic alkaloids of ergot) which they had previously been unable to take except for short periods or in inadequate doses owing to its "blocking effect." Good results are claimed from this combined therapy, falls in the blood pressure up to 70 mm. Hg systolic and 30 mm. Hg diastolic being recorded and maintained up to 10 months. The remaining 11 patients were found to respond to CCK 179 alone, equally good results being noted.

C. W. C. Bain

The Effect of the Dihydrogenated Ergot Alkaloids (CCK–179) on the Electrocardiogram. M. C. THORNER, C. T. STOLPESTAD, and G. C. GRIFFITH. *Ann. west. Med. Surg.*, 4, 795–798, Dec., 1950.

Five patients with normal blood pressure and 5 with hypertension were given intravenous injections of "CCK 179" (a mixture of the 3 sympathicolytic dihydrogenated ergot alkaloids). Electrocardiograms were taken 5 to 60 minutes after the injections. No changes were found, although substantial falls in blood pressure were noted in 2 of the patients.

C. W. C. Bain

Diseases of the Heart and Circulation. PAUL WOOD, O.B.E., M.D., F.R.C.P. London: Eyre & Spottiswoode, 1950. Pp. 589; illustrated. 70*s*.

In reading this excellent rendering of modern cardiological thought and practice one is impressed by the author's gift of clear descriptive phraseology and crisp statement of fact. Sometimes his assertions are so incisive that they seem too dogmatic, yet it is difficult to find fault with his quoted opinions, and the impression gained is that an enormous amount of careful work has gone into their verification. Indeed, so much of the ground covered has already been tilled in person by the author that its harvest is enriched by this direct approach and by his first hand experience. Many or the X-ray illustrations could be improved, but if the book suffers thereby it gains from its valuable and up-to-date bibliography and the detailed differential index. This is a work which no cardiologist who aspires to keep abreast of his subject can afford to be without.

J. L. Lovibond

Clinical Heart Disease, 4th ed. SAMUEL A. LEVINE, M.D., F.A.C.P. W. B. Saunders & Company, Philadelphia & London, 1951. Pp. 556; 192 figs., 40*s*.

The attraction of this work lies in the pleasant reading that it affords. One is, however, mildly disappointed to find that the section on congenital heart disease is not more informative, that the chapter on hypertension omits discussion of much recent work, and that, throughout the book, several aspects of more modern therapeutic methods have been omitted. Nevertheless, so rich are its pages with the author's personal clinical illustrative experiences and so many are the wise counsels of broad principle and human understanding which it contains that the reader cannot fail to profit by studying it. The greater part of the book covers the clinical field of heart disease by chapters which take the form of individual essays, wherein emphasis is always given to the practical aspects of the subject. There are no illustrations or bibliography, but the last third of the volume, which is devoted to clinical electrocardiography, is profusely illustrated. *J. L. Lovibond*

Introduction to the Regulation of Blood Pressure and Heart Rate. CHARLES C. THOMAS. Corneille Heymans, Springfield, Illinois, U.S.A., 1951. Pp. 60; 25 figs. 15*s*.

The physiological control of arterial pressure is summarized and discussed. The separate and complex mechanisms that affect the control of circulatory homeostasis are dealt with individually in short chapters, illustrated by explanatory figures, and 55 references are given. This booklet is printed by lithography which is unattractive to the reader, but it should find a place as a work of reference in circulatory problems.

J. L. Lovibond

Heart Disease in Pregnancy. A. MORGAN JONES. London: Harvey & Blythe, Ltd., 1951. Pp. 57; 2 figs; 4 plates. 6*s*.

The indications for premature termination of pregnancy in heart disease are now well understood, and interference is not often justified. The outlook for the pregnant mother with heart disease is considerably less gloomy than it used to be. In this thoughtful and informative monograph the many aspects of diagnosis, management, and prognosis are carefully discussed, and helpful opinions are expressed. An interesting chapter on the physiology of the circulation is included, and a list of 83 references appears at the end. The work is based on observations of 485 consecutive pregnant patients with organic heart disease, and is a worthy counterpart to the earlier studies from the Manchester School made by Bramwell, who provides the foreword to the present book. *J. L. Lovibond*

Characteristics of the Unipolar Præcordial Electrocardiogram in Normal Infants. R. F. ZIEGLER. *Circulation*, 3, 438–443, March, 1951.

Unipolar præcordial leads were recorded in 145 normal infants from birth to the age of 3 years. Analysis of these revealed evidence of a normal degree of right ventricular preponderance at this age, as exemplified by large amplitude and late onset of the intrinsic deflection in leads from the right side of the præcordium. The characteristic features of the T wave include upright T waves in V1 and inverted T waves in V5 and V6 during the first 24 hours after birth. During the next 48 to 72 hours there is progressive inversion of T in V1 and V2, and elevation in V5 and V6. In older infants and young children there is slight to moderate elevation of the S–T segment, with multiphasic or inverted T waves in leads from the right and mid-præcordium, and upright T waves in leads from the left præcordium. Emphasis is laid upon the value of these criteria of normality in the diagnosis of congenital heart disease.

William A. R. Thomson

Effect of Nitroglycerine on the Cardiovascular system of Normal Persons. R. WÉGRIA, J. L. NICKERSON, R. B. CASE, and J. F. HOLLAND. *Amer. J. Med.*, **10**, 414–418, April, 1951.

The effect on the cardiovascular system of doses of nitroglycerine used clinically (0·0006 g.) was studied in 10 normal persons. Cardiac output per minute, systolic output, and heart rate were observed to increase whereas the blood pressure did not change. The cardiac work per beat and per minute is therefore increased by the dose of nitroglycerine employed.

These findings suggest that nitroglycerine relieves the anginal pain of myocardial ischæmia by increasing the coronary flow relatively more than the work of the heart. They would also appear to suggest a physiologic basis for caution in using nitroglycerine when the cause of the anginal pain is not definitely established to be simple temporary myocardial ischæmia and may be due to coronary occlusion.—(Authors' summary.)

Subacute Bacterial Endocarditis. A Review of 442 Patients Treated in 14 Centres Appointed by the Penicillin Trials Committee of the Medical Research Council. J. E. CATES and R. V. CHRISTIE. *Quart. J. Med.*, **20**, 93–130, April, 1951.

This paper reports the results of the treatment of 442 patients with subacute bacterial endocarditis in 14 centres in the British Isles between 1945 and 1948. In 408 cases a positive blood culture was obtained before treatment began. The follow-up period varied from a few months to over 4 years. The ages of the patients ranged from 7 to 74 years, but 62% were between 15 and 35 years of age. There were 202 men and 206 women.

Disease of the mitral valve alone occurred in 169 patients. The aortic valve alone was affected in 44 cases. Both aortic and mitral valves were diseased in 143 cases. There were 45 patients with congenital heart disease. The sex incidence in this group was equal, but a ventricular septal defect was slightly commoner in the males and persistent ductus arteriosus in the females. Seven patients were found post mortem to have bicuspid aortic valves. Of 139 cases in which the ætiology was specifically sought there were acquired lesions in 120, and probably 90% of these were rheumatic. Syphilis was present in 4 cases, but was the sole cause of the disease in only one. Hypertensive heart disease was the cause in only one case. In no case was myocardial infarction the predisposing cause of infection, nor did infection occur in a previously normal heart.

The infecting organism was an α-hæmolytic streptococcus (*Streptococcus viridans*) in 87% and a non-hæmolytic streptococcus in 7% of cases. In the remainder other streptococci, staphylococci, *Hæmophilus influenzæ* or *para-influenzæ*, and a pneumococcus were found, and in 3 cases there was a mixed infection. In 85% the resistance of the *Strept. viridans* to penicillin was between one-quarter and twice that of the Oxford staphylococcus; in only 4% was it 8 or more times resistant. Of the patients with *Strept. viridans* infection 65 relapsed, and an increase in resistance to penicillin was reported in 15.

In a representative group of 215 cases there were signs of dental sepsis or a history of tooth extraction in 48%, and in 14% some other focus was found. In a group of statistically "unselected" patients the initial symptoms were those of fever in 63%, heart failure in 30%, peripheral embolism in 20%, joint pains in 17%, and pulmonary embolism in 10%. Other initial symptoms included gastro-intestinal upsets, headaches, Osler's nodes or tender finger pulps, skin rashes, or amenorrhœa.

On the basis of these results it is recommended that the minimum dosage of penicillin should be 2 mega units daily for 4 to 6 weeks. If the infecting organism is four or more times as resistant as the Oxford staphylococcus a larger dose may be required; with very resistant organisms 10 or 20 mega units daily may be necessary. Probably the combination of penicillin and streptomycin is the treatment of choice in these cases.

Patients who relapsed did so within 20 days from the end of treatment in 75% and within a month in 92% of cases. After 6 months of apparent cure the risk of a delayed relapse or reinfection is 2% per annum. A major arterial embolism occurred in 145 cases (35%); in half of these it was cerebral. Coronary embolism was diagnosed during life in 8 cases and found post mortem in another 8. Other sites of serious embolism included 8 in the eye, 6 in the mesentery, and 10 in the aorta, iliac artery, or main blood vessels of the leg. Pulmonary embolism affected 35% of the patients with congenital and 10% of those with acquired heart disease. Auricular fibrillation was recorded at some stage in 4% of cases.

Of the patients who died from heart failure 53 came to necropsy, and severe damage to the valves or chordæ tendineæ was found in 26%. Over 80% of patients showed some evidence of mild renal damage, but this usually resolved in a few weeks. Infection had not been controlled or had recurred in 45 (23%) of the 195 patients who died; many of these had received inadequate treatment. Heart failure was the commonest cause of death and was present in 63% of cases. Other causes of death

were arterial embolism (13%), hæmorrhage (10%), uræmia (9%), rheumatic fever (2%), pulmonary embolism (2%), and pneumonia (2%). Heart valves were stained for organisms in 60 cases in which patients died with the infection apparently controlled: organisms were seen in 39 (65%) and seemed to be viable in 19 (33%). The significance of these findings remains in doubt. Of the 408 patients 14% died during treatment and another 27% died in the first 6 months after treatment had ceased. In subsequent years an average of only 4% of the survivors died per annum.

The most important of the various factors affecting prognosis was the presence of heart failure before treatment. Other factors were age, sex, the site of the lesion and the question whether it was congenital or acquired, the state of nutrition, and the duration of infection.

A. W. H. Foxell

Treatment of Enterococcal Endocarditis and Bacteremia. Results of Combined Therapy with Penicillin and Streptomycin. W. C. ROBBINS and R. TOMPSETT. *Amer. J. Med.*, **10**, 278–299, March, 1951.

To 5 patients with enterococcal enteritis the authors gave concurrent courses of penicillin and streptomycin for periods ranging from 28 to 42 days. Permanent arrest of the infection occurred in 4 cases. Although the fifth patient succumbed, it was considered that the infection had been controlled and that death was due to cardiac failure.

A. Garland

Clinical Aspects of Coronary Heart Disease. An Analysis of 100 Cases in Patients 23 to 40 Years of Age with Myocardial Infarction. M. M. GERTLER, M. M. DRISKELL, E. F. BLAND, S. M. GARN, J. LERMAN, S. A. LEVINE, H. B. SPRAGUE, and P. D. WHITE. *J. Amer. med. Ass.*, **146**, 1291–1295, Aug. 4, 1951.

The subjects of the authors' study of myocardial infarction were 97 men and 3 women in whom infarction developed before the age of 40. Of these patients 64 had preceding symptoms—angina, dyspnœa or "indigestion." The attacks came on as a rule during the working day: in only 11 cases was the onset during sleep. In 21 instances the patients were engaged in some unusual activity suggesting that effort might accelerate the process leading to infarction. The patients were of mesomorphic body build, shorter, more muscular, heavier, and broader than a control group, and they usually looked older than their chronological age. Blood cholesterol levels were higher on the average than in the controls of the same age. Attacks tended to come on during the winter months.

J. McMichael

Coronary Occlusion in Young Adults. Review of a Hundred Cases in the Services. M. NEWMAN. *Lancet*, **1**, 1045–1048, May 12, 1951.

The author reviews 50 further cases of coronary occlusion occurring in men and a woman recently discharged from the Services. With the series described in 1946 this makes a total of 100 patients. Of these the youngest was 20 years and the eldest 35; a quarter of them were under 28 years and half under 32. Nearly all were graded A1 on admission; only 9 out of the 100 were officers and only 14 had sedentary occupations before joining up. Most were strongly built. The total mortality was 80% and 74% were either found dead or died immediately after a collapse. A thrombus was present in less than one-quarter of the cases, the occlusion being usually caused by an atheromatous plaque or gross atheroma.

It is suggested that genetic influences are the important factor in the ætiology of coronary disease in young people.

C. W. C. Bain

The Electrocardiogram in Hypertension. A. W. D. LEISHMAN. *Quart. J. Med.*, **20**, 1–12, Jan., 1951.

An analysis of 218 hypertensive patients is reported. Major abnormalities, such as T-wave inversions in leads I, II, or V4, V5, or V6, were significantly commoner in patients with severe retinal changes, angina, severe diastolic hypertension, and cardiac enlargement. There was no consistent association, however, between any of these findings and the electrocardiographic changes, which could not be explained satisfactorily on the sole basis of ventricular fatigue, hypertrophy, or of coronary insufficiency.

The progress of a group of 11 patients followed after sympathectomy was considered. It was noted that the electrocardiographic improvement found in 7 could be better associated with gradual reduction in heart size than with a fall in blood pressure.

It is suggested that the cardiographic changes of hypertension may be explained best by the occurrence of ventricular hypertrophy out of proportion to the available capillary blood flow, and that they are therefore fundamentally due to myocardial ischæmia. The ischæmia and cardiographic abnormalities may be corrected if reduction in ventricular hypertrophy follows sympathectomy.

The cardiogram in a hypertensive should thus be interpreted in relation to the size of the heart. A normal tracing in the presence of an enlarged heart implies a good coronary flow, while an abnormal tracing with a heart of normal size implies an impaired coronary circulation.

J. A. Cosh

The Prognosis in Arterial Hypertension: Report on 117 Patients under 53 Years of Age followed 8 to 10 Years. A. H. GRIEP, G. R. BARRY, W. C. HALL, and S. W. HOOBLER. *Amer. J. med. Sci.*, **221**, 239–249, March, 1951.

In this investigation 117 patients under 53 years of age with blood pressures exceeding 160/110 mm. Hg but without primary renal disease or terminal complications were followed up for 8 to 10 years. Of these, 46% died from hypertensive complications almost equally divided between cardiac and cerebrovascular causes; uræmia was rare; 46% were alive after 10 years. Prognosis was more serious when hypertensive complications—in particular cardiac enlargement, persistent albuminuria, and encephalopathy—were present. The height of diastolic blood pressure, the male sex, abnormal electrocardiogram, and retinopathy were significant factors in prognosis.

Age, duration of hypertension, and the presence of headaches or dizziness at the initial examination were not significant. About 80% of patients with hypertensive complications died within 9 years, compared with only 20% in cases without vascular damage. Of the survivors 80% were without disabling symptoms. The authors note that the blood pressure showed little tendency to change either in the survivors or in those who died, and that the height of or changes in the level were unreliable as prognostic signs. *I. Ansell*

The Rice Diet in Ambulatory Patients with Essential Hypertension. A Two-year Study of 105 Patients. D. G. LOOFBOUROW, D. CALLAHAN, and R. S. PALMER. *New Engl. J. Med.*, **244**, 577–581, April 19, 1951.

Patients were selected because of symptoms giving rise to anxiety, because they were seriously but not acutely ill, because they had damage to one or more organs, or because they had malignant hypertension not amenable to surgery. This group represented about 20% of the patients attending the hypertension clinic. A control series on conservative treatment was studied concurrently. Patients were maintained on the diet for periods ranging from 4 weeks to 4 months. Adherence to the diet was tested by the finding of 10 mEq. or less of urinary chloride per litre. Patients with more than 50 mEq. were considered to be delinquents. The criterion chosen with regard to blood pressure was a fall of 20 mm. in the diastolic pressure, whereas Kempner adopted a similar fall in the mean arterial pressure.

Many of the patients, as is common with a new treatment, reported subjective improvement.

The investigators conclude that this severe form of treatment should be reserved for severe forms of the disease. It is easy to explain and it is easy to follow. It may, however, be lethal, is costly in time and money, and, because of the monotony, may easily give rise to depression. They point out that their stricter criterion for improvement in blood pressure indicates that this has occurred in only one-half to one-third the number of cases shown to be improved when the Kempner method is used. *J. Maclean Smith*

Treatment of Arterial Hypertension by Penta- and Hexamethonium Salts. Based on 150 Tests on Hypertensives of Varied Aetiology and 53 Patients Treated for Periods of Two to Fourteen Months. F. H. SMIRK and K. S. ALSTAD. *Brit. med. J.*, **1**, 1217–1228, June 2, 1951.

This important paper reports 53 cases of hypertension treated with hexamethonium bromide for periods of 2 to 14 months. The cases were selected from 150 cases of varied ætiology after a test injection of 15 mg. A good fall in blood pressure was the basis of selection for continued treatment. The authors found that tolerance to the drug rapidly developed, and 5 to 10 times the original dose might subsequently be necessary to produce the same effect as the initial dose. The effects of the drug were enhanced by a low-sodium diet.

It is pointed out that with oral dosage it is not always possible to maintain a substantial fall in blood pressure. The selection of patients requires care, and caution should be exercised in those with much cerebral or coronary sclerosis. Treatment can be dangerous if it is not adjusted to the patient's response to the drug, postural hypotension, salt intake, and tolerance. With impairment of renal function it may be ineffective.

There has been good clinical improvement in the subject treated, with relief of dyspnœa, pulmonary congestion, headache, papilloedema, and retinal exudation. In some cases there has been complete or partial reversal of the electrocardiographic changes of hypertension. The authors believe that with care in the administration of the drugs, hexamethonium salts are an effective and generally applicable remedy for most cases of hypertension. *James W. Brown*

Uraemia Complicating Low Salt Treatment of Heart Failure. A. B. BLACK and J. A. LITCHFIELD. *Quart. J. Med.*, **20**, 149–162, April, 1951. 3 figs., 18 refs.

The authors describe cases of cardiac failure in which the patient, in addition to receiving a mercurial diuretic, was given a diet containing less than 0·2 g. of sodium per day. This treatment led to salt depletion, but at the same time to uræmia and, in some cases, to death. The glomerular filtration rate, renal plasma flow, and urea clearance were depressed. Administration of salt led to rapid improvement. *G. Loewi*

Congestive Heart Failure and Hyponatremia: Untoward Effects of Mercurial Diuresis. D. CITRON, B. BERCU, R. LEMMER, and E. MASSE. *Ann. intern. Med.*, **34**, 872–880, April, 1951.

This paper is a salutary warning against the dangers of using mercurial diuretics with a low-sodium diet without adequate biochemical control in the treatment of congestive heart failure. In the presence of a lowered sodium plasma level and hypochloræmia, mercurial diuresis is diminished, the patient's condition deteriorates, and if electrolyte depletion is increased by further attempts at diuresis, then dizziness, drowsiness, muscular pains, and apathy occur. Anorexia may further decrease sodium intake and confusion or frank psychosis may appear, to be followed at times by convulsions, coma, and death. The predominant role of sodium is indicated by persistence of the syndrome, despite raising of the plasma chloride level by administration of ammonium chloride. Careful intravenous infusion of 5% sodium chloride solution restores the electrolyte balance with rapid disappearance of these symptoms. *T. Semple*

Acute Nonspecific Pericarditis. Clinical, Laboratory, and Follow-up Considerations. D. B. CARMICHAEL, H. B. SPRAGUE, S. M. WYMAN, and E. F. BLAND. *Circulation*, **3**, 321–331, March, 1951.

A clinical survey and follow-up of 50 cases of acute non-specific pericarditis is described. The disease occurred at all ages, but 31 of the patients were in the second, third, and fourth decades: 29 had an upper respiratory infection which preceded the pericarditis by

from 1 to 60 days; in over half, however, this interval was 7 to 14 days. In 25 cases the onset was abrupt, and in 46 the initial symptom was pain. The commonest associated symptoms were malaise and fever (49), cough (19), and dyspnœa (18). A pericardial rub was heard within a few hours of onset in the majority of the cases. Pleural effusion was found in 14 cases. Cardiographic changes were nearly constant, but might be very evanescent.

Information was available about 41 patients after 2 or more years: 1 had died of hypertension known to have been present for years before the pericarditis: 6 gave a clear-cut history of more than one attack of pericarditis, and 2 had had four recurrences each. In 6 cases electrocardiographic changes had persisted. An X-ray follow-up examination was made on 37 patients and one showed calcification of the pericardium. However, the majority were in excellent health. *C. Bruce Perry*

Metastatic Carcinoma of the Pericardium. F. LAMBERTA, M. J. NAREFF, and J. SCHWAB. *Dis. Chest.*, **19**, 528–536, May, 1951.

During necropsy on 1000 patients with carcinoma, metastasis in the pericardium was found in 31. In 23 the primary site was the lung; in the remainder it was in the breast, œsophagus, or pancreas. Pericardial effusion was found in 9 of the cases, constrictive pericarditis in one. The remainder showed either a direct extension of the growth or else an obliterative pericarditis. A case of hæmopericardium from a primary growth in the pancreas and one of constrictive pericarditis secondary to a bronchogenic carcinoma are described.

It is concluded that metastatic involvement of the pericardium is rare and does not usually cause symptoms. The occurrence of paroxysms of auricular fibrillation and flutter should suggest involvement of the epicardium. *C. W. C. Bain*

Hydraulic Formula for Calculation of the Area of the Stenotic Mitral Valve, other Cardiac Valves, and Central Circulatory Shunts. I. R. GORLIN and S. G. GORLIN. *Amer. Heart J.*, **41**, 1–29, Jan., 1951. 5 figs., 34 refs.

A formula for calculating the area of the mitral orifice has been derived from standard hydrokinetic orifice formulae. In its general form the formula is $A=\frac{F}{C\sqrt{2gh}}$, where A=cross-sectional area in sq. cm. of the orifice; F=flow rate in ml. per second; C=empirical constant; g=gravity acceleration; and h=pressure gradient across the orifice. (When this formula is applied to a diseased mitral valve the factor g is the only one which is capable of direct measurement.) This formula has been used to calculate the area of the orifice of mitral valves, tricuspid valves, atrial septal defects, and ventricular septal defect. The constant C has yet to be determined for the aortic valve.

In 6 cases of mitral stenosis the estimated size and the size of the orifice measured at necropsy agreed to within 0·2 sq. cm. The method is put forward as a useful objective test in the evaluation of the effects of valvulotomy. *H. E. Holling*

Cortisone Therapy in Acute Rheumatic Carditis: Preliminary Observations. T. N. HARRIS, W. B. ABRAMS, T. F. P. LEO, and J. P. HUBBARD. *Circulation*, **3**, 215–223, Feb., 1951.

The authors have studied the effects of cortisone therapy in 4 cases of acute rheumatic carditis. The ages of the patients were 4, 13, 14, and 22 years. The daily dosage of cortisone was 112·5 mg., except for the 4-year-old child, who received 75 mg. daily. The 4-year-old received one course of treatment, the other patients two courses, the duration of a course being about 3 weeks.

Fever generally subsided in from 1 to 7 days from the beginning of cortisone therapy. Joint pains, where present, disappeared within 4 days. In 3 patients congestive cardiac failure developed 4, 10, and 20 days respectively after starting cortisone therapy; this responded well to the usual therapeutic measures while hormone therapy was continued.

After cessation of the course of cortisone treatment, recrudescence of rheumatic activity occurred in all 4 patients. *C. E. Quin*

Priscol in Treatment of Peripheral Vascular Disease. J. F. GOODWIN and S. KAPLAN. *Brit. med. J.*, **1**, 1102–1107, May 19, 1951.

An account is given of an investigation of the effects of 2-benzyl-4: 5-imidazoline hydrochloride (priscol) in 12 patients between the ages of 47 and 75 with obliterative vascular disease. The effect of priscol was assessed objectively by means of skin-temperature readings, reflex heating tests, and measurement of circulation rate with sodium fluorescein. The methods are described in some detail. Patients were placed in two groups according to response to reflex heating—the "spasto-occlusive" group with a considerable number of collateral vessels capable of dilating, and the "occlusive" group with poor collateral supply. All patients were investigated after reflex heating before and during therapy.

An initial dose of 50 mg. thrice daily was given by mouth, and in 2 cases this was increased to 100 mg. thrice daily, the duration of treatment being from 12 days to 12 weeks. All patients noticed flushing of the whole body, mainly the lower limbs and also headache, but these symptoms were not severe. Graphs show the response to treatment in both groups, and tables the effect on fluorescein times. There was subjective improvement in all patients except one, the pain, numbness, and paræsthesiæ being reduced or abolished. Nine out of 10 patients complaining of claudication could walk farther without pain, and pain was less severe when it did occur. Two patients suffering from Raynaud's disease did not develop an attack during therapy.

It is concluded that priscol is an effective vasodilator when given orally to patients with occlusive arteritis, and is more effective in those in whom vasodilatation of collateral vessels is possible, although limited improvement may be expected in the other group. It is suggested that it may prove an alternative to, but not a substitute for, sympathectomy. It may also prove to be the treatment of choice in uncomplicated Raynaud's

disease. Absence of serious toxic effects and ease of administration suggest that further trial is indicated. A brief review of the results of previous workers with this drug is included. *P. G. Swann*

An Evaluation of Some Dihydrogenated Alkaloids of Ergot in the Management of Chronic Peripheral Vascular Diseases. R. J. POPKIN. *Angiology*, **2**, 114–124, April, 1951.

A mixture of equal parts of three hydrogenated ergot alkaloids—dihydroergocristine, dihydroergocornine, and dihydroergocryptine—was used in the treatment of certain groups of peripheral vascular disease in the hope of producing a "medical sympathectomy." The drug was usually administered orally in doses of 1 mg. once, twice, or three times daily. Observations were also made on the effect of 0·3 mg. administered sub-cutaneously.

Treatment was given for 12 to 24 months to 178 patients with arteriosclerosis obliterans and 14 with thrombo-angiitis obliterans. Of this total, 126 showed what is claimed as "significant clinical improvement." The improvement usually noted consisted of increased temperature in the affected limb and more rapid warming; 25% of the patients were able to walk farther before pain was experienced, and paræsthesia and pain at rest were reduced in 15%. All patients (20) with ulceration showed increased healing. Of 26 patients with vaso-spastic disorders—Raynaud's syndrome due to various causes and Raynaud's disease—only 4 showed any improvement.

Patients with œdema of the legs due to thrombophlebitis and other conditions were also treated, and in 25 out of 32 there was diminution of the œdema. Oscillometer recordings, blood pressure, and pulse rate showed no constant change. Angina pectoris was never affected and the electrocardiogram was unchanged. Thus the main effects of the drug were noted in organic obliterative arterial disease. In elderly patients there also occurred a general euphoria and improved sense of well-being. *C. Bruce Perry*

The Pathogenesis of the Wolff–Parkinson–White Syndrome. (Über die Pathogenese der atypischen verkürzten AV-Überleitung (Syndrom von Wolff, Parkinson und White). E. GADERMANN. *Z. klin. Med.*, **148**, 1–11, 1951.

The author reports 42 cases studied in detail with special reference to the fundamental process of the malady. The original cases of Wolff, Parkinson, and White (*Amer. Heart J.*, 1930, **5**, 685) were marked by functional bundle-branch block and abnormally short P–R interval and were in young people otherwise healthy except for liability to attacks of auricular fibrillation or of paroxysmal tachycardia. The authors regarded the malady as benign, but this conception has been challenged more than once in the last 20 years.

In the present article the view is expressed that premature excitation of the ventricle may be the underlying disturbance, and that this is by no means always benign. Moreover, the malady is almost certainly due to extra conducting bundles between the auricles and ventricles but other abnormalities, such as a single accessory branch from the main bundle, may well be the cause of premature excitation. Just as there may well be a wide variety of abnormalities in the conducting bundles, so there may be a wide variation in the prognosis of the malady, which is probably a great deal more common than is usually believed.

(The present article should be read in association with the work of Duthie (*Brit. Heart J.*, 1946, **8**, 96) and with the original work of Parkinson.) *G. F. Walker*

The Treatment of Urgent Cases of Paroxysmal Auricular Fibrillation. A Proposed Method for Aiding in the Choice between Digitalis and Quinidine. E. HELLMAN, M. R. ALTCHECK, and C. D. ENSELBERG. *Amer. J. med. Sci.*, **221**, 655–660, June, 1951.

Digitalis was given intravenously to 27 patients with paroxysmal auricular fibrillation. In one case only was normal rhythm restored; slowing of the ventricular rate was achieved in one other case. Quinidine was given by mouth to 22 patients and normal rhythm was restored in 20. The smallest dose of quinidine required was 0·2 g.; the largest total dosage was 7·5 g., and the largest individual dose was 0·8 g.

The authors suggest that digitalis will not slow the ventricular rate unless heart failure is present. They consider, however, that it is worth giving intravenous digitalis first. If no slowing has occurred within an hour, quinidine by mouth should be substituted. [The use of intravenous quinidine is not mentioned.]

C. W. C. Bain

The Circulation Time (Arm to Tongue Time) in Large Pericardial Effusions: an Aid in the Differential Diagnosis between Large Pericardial Effusion and Cardiac Dilatation. S. BELLET, C. S. NADLER, and W. A. STEIGER. *Ann. intern. Med.*, **34**, 856–861, April, 1951.

In 16 patients with large pericardial effusions and small hearts, the circulation time was found to be normal or only slightly raised. In view of the established relationship between cardiac dilatation and circulation time, this simple test would seem to be a useful aid in differential diagnosis. *T. Semple*

An Evaluation of Methods of Dicumarol Administration. S. SHAPIRO and M. WEINER. *Amer. Heart J.*, **41**, 749–754, May, 1951.

Factors to be considered in deciding the initial dosage of dicoumarol are reviewed. Estimation of the blood level of dicoumarol in one patient who was relatively insensitive to dicoumarol and who transformed it slowly showed that an initial dose of 600 mg. followed by 400 mg. at 10-day intervals maintained a satisfactory blood prothrombin level; daily doses of 50 and 100 mg. caused a toxic accumulation after the drug had been stopped at a satisfactory prothrombin level. Large doses at intervals of several days are preferred to a daily-dose regimen. *D. Verel*

The Action of Procaine Amide in Cardiac Arrhythmias. H. MILLER, M. H. NATHANSON, and G. C. GRIFFITH. *J. Amer. med. Ass.*, **146**, 1004–1007, July 14, 1951.

A dose of 500 mg. of procaine amide was administered by slow intravenous injection to 50 patients with cardiac arrhythmia. Ventricular premature systole was abolished within one minute in 26 out of 31 cases. The effect lasted from 7 minutes to over 2 hours. Of 8 cases of ventricular tachycardia, normal rhythm was restored in 4 and the rate was slowed materially in another 4. Normal rhythm was also restored in 3 cases of supraventicular tachycardia, and the rate slowed in 1. Established fibrillation was unaffected, but a paroxysm of fibrillation ceased one minute after the injection. The drug is effective by mouth and can be given in doses varying from 0·5 g. three times daily to 1 g. 3-hourly either prophylactically or to terminate a paroxysm.

Reactions were mild and consisted in a bitter taste, flushing, or a moderate fall in blood pressure after intravenous injection, and gastric discomfort after oral administration. It would appear that this drug has a definite place in the control of the arrhythmias, especially arrhythmia arising in the ventricle. *C. W. C. Bain*

Effect of Venous Occlusion on Peripheral Arterial Blood-flow. J. E. THOMPSON and J. R. VANE. *Lancet*, **1**, 380–382, Feb. 17, 1951.

Intermittent venous occlusion has been employed in the treatment of obliterative disease of the blood vessels, the basic idea being that hyperæmia may follow the release of the occlusion and permit an improved collateral circulation. Owing to conflicting reports as to the results of this treatment, a detailed study has been made in cats. In the experimental animal the usual method has been to measure the arterial blood flow during and after periods of venous occlusion, while in man indirect methods have been employed.

It is concluded that venous occlusion actually decreases the arterial inflow, and that any transient increase in arterial flow following release of the venous obstruction does not compensate for the reduction during the period of occlusion. The possible errors that gave rise to the impression that there was an increased arterial supply are described. *T. Holmes Sellors*

Resection of the Auricular Appendages. W. P. LONGMIRE, J. M. BEAL, and W. H. LEAKE. *Dis. Chest*, **19**, 307–315, March, 1951.

In rheumatic heart disease with auricular fibrillation the incidence of peripheral arterial embolism is high. As a means of preventing recurrence the authors propose resection of the atrial appendages, since the evidence indicates that in such cases the majority of emboli originate in them. Three cases are reported; left auricular appendectomy was performed on 2 patients and right appendectomy on 1. The latter had suffered repeated pulmonary infarction, while the 2 others had had recurrent systemic embolic incidents which, in one patient aged 50 years, had required bilateral mid-thigh amputations.

The patients tolerated the operation well; mural thrombi were present in each resected appendage. Maintained subsequently on a low salt diet and continued digitalis, no patient experienced further embolic episodes during a follow-up of from 5 to 10 months.

C. A. Jackson

The Deep Subcutaneous Administration of Concentrated Heparin. Observations on 15 Patients. D. V. BAKER, R. WARREN, and J. S. BELKO. *New Engl. J. Med.*, **244**, 436–438, March 22, 1951.

The effectiveness of deep subcutaneous injections of concentrated heparin (100 mg. per ml.) in the control of thrombo-embolic disease has been studied. Clotting times were estimated four times daily at first, and later twice daily, in patients under treatment. A dose of 50 mg. heparin 4-hourly resulted in a clotting time of between 15 and 50 minutes, and this could be maintained up to 12 days. It is pointed out that the injection must be given deeply into the subcutaneous tissue, in which case there is no pain or hæmatoma at the site of injection; sites over the deltoid or gluteal muscles were used. The results in 15 patients ranging in age from 28 to 63 years are given in graphic form. *Peter Martin*

Aortic Aneurysm Associated with Arachnodactyly. M. F. MOSES. *Brit. med. J.*, **2**, 81–84, July 14, 1951.

The author notes that the number of necropsy reports on this condition is small, 26 in all. There were aortic lesions in one-half, but only 9 reports contained details of the histology of the aorta. This paper reports 2 further cases and includes post-mortem and histological findings. Both patients were women and had lesions of the lens in early life. Although a patent foramen ovale is assumed to be the most common cardiovascular lesion associated with arachnodactyly, aortic defects have been reported in 15 cases whereas a patent foramen ovale occurred in only 8 cases. The lesions in the aorta are thought to be due to a congenital malformation of the media.

R. F. Jennison

Ebstein's Disease. C. BAKER, W. D. BRINTON, and G. D. CHANNELL, *Guy's Hosp. Rep.*, **99**, 247–275, 1950.

This rare congenital defect of the tricuspid valve, first described by Ebstein, gives rise to a variable clinical picture. Cyanosis, which is usually present, depends on the size of the atrial septal defect, but finger-clubbing and squatting are uncommon, serving to differentiate the condition from Fallot's tetralogy. Palpitation and reduction of effort tolerance are usual, sometimes with anginal pain. Cardiac enlargement is considerable and is caused principally by a dilated rather than hypertrophied right auricle and ventricle. There is no pulmonary stenosis. Both systolic and diastolic murmurs may be present, but are not constant. Triple rhythm appears to be characteristic and may be explained by the right-bundle-branch block and prolonged auriculo-ventricular conduction which often accompany it. Pulsating liver and other signs of tricuspid incompetence may add later to the disability. Death from pulmonary tuberculosis or paradoxical embolism is not uncommon.

The case histories of 2 patients, aged 11 and 17, are here fully reported and analysed in the light of cardiac catheter studies, angiocardiography, and morbid anatomy, and the literature, embryology, and differential diagnosis are discussed in detail. *J. L. Lovibond*

Endocardial Sclerosis. Review of Changing Concepts with Report of Six Cases. H. W. EDMONDS and W. B. SEELYE. *Pediatrics*, **7**, 651–659, May, 1951.

Six cases of the condition known as fœtal endocarditis, fibro-elastosis of the endocardium, or endocardial fibrosis, are reported together with necropsy findings. As in previously recorded cases the occurrence of the disease in infancy, the presence of the lesions in the left side of the heart, and the frequency of sudden death are stressed. After discussing various theories the authors agree with other workers that the ætiology is developmental rather than inflammatory, and that the heart failure which supervenes is due to intramyocardial congestion caused by occlusion of capillary drainage into the left ventricle as a result of gross endocardial thickening. *G. J. Cunningham*

Aneurysms of the Sinuses of Valsalva. G. R. VENNING. *Amer. Heart J.*, **42**, 57–69, July, 1951.

Seven cases of aneurysm of the sinus of Valsalva are reported. The lesion was thought to be congenital in 1, probably congenital with superimposed endocarditis in 2, and the result of endocarditis in 4. In one case the rupture of the aneurysm into the right atrium was correctly diagnosed in life from the clinical and radiological findings. It was suggested by the sudden onset of failure in a patient who at the same time became aware of a noise in his chest. There was gross congestive failure, with marked venous pulsation, a collapsing pulse, a displaced, forceful apex beat, and a loud, rough, continuous murmur greatest at the left sternal border by the 3rd and 4th spaces. There was electrocardiographic evidence of bundle-branch block with wide and bifid P waves. Radiological examination showed general cardiac enlargement and expansile pulsation in the small intrapulmonary vessels.

The embryology and the difficulty of interpreting the pathological findings in the presence of endocarditis are discussed. *D. Verel*

Calcification in the Patent Ductus Arteriosus. H. RUSKIN and E. SAMUEL. *Brit. J. Radiol.*, **23**, 710–717, Dec., 1950.

A description is given of 4 cases in which calcification in a patent ductus arteriosus was demonstrated radiographically. The authors discuss the differential diagnosis of this from 12 other causes of calcification in this region. In the 4 cases described, the calcification was seen as a curvilinear shadow lying between the aortic knob and the pulmonary arc. The calcifications showed simultaneous movement with the pulsation of the aorta and pulmonary artery. Regarding the differential diagnosis an aortic calcification is likely to cause confusion, but this is extremely rare in young adults and the arc of calcification is larger. It should also be remembered that calcification at the aortic end of an obliterated ductus does occasionally occur. *G. A. Stevenson*

Ventricular Filbrillation due to Digitalis Preparations. A Review and Report of Two Cases following Intravenous Administration of Acetyl Strophanthidin. C. D. ENSELBERG, J. P. CROCE, and B. LOWN. *Circulation*, **3**, 647–657, May, 1951.

The authors have reviewed the literature on digitalis-induced ventricular fibrillation, but were able to find only 4 cases with electrocardiographic proof. They suggest that ventricular tachycardia is not necessarily the precursor of fibrillation, and may terminate in ventricular standstill. Some deaths from digitalis have followed a profuse diuresis, and may be connected with a profound depletion of potassium which renders the heart more sensitive to digitalis.

Three instances of ventricular fibrillation, with graphic proof, are reported in 2 patients after intravenous acetyl strophanthidin. Both were elderly patients in severe congestive cardiac failure and had suffered recent cardiac infarction; one patient survived the first attack of fibrillation, but succumbed after a second injection of acetyl strophanthidin. It is probable that both patients would have died in any event.

It is well known that digitalis poisoning readily occurs in elderly persons with severely damaged hearts, particularly after myocardial infarction. Whenever possible the intravenous use of digitalis should be avoided in such patients. *J. F. Goodwin*